

## REMARKS

Applicant respectfully requests reconsideration of the present application.

### I. Disposition of the claims

Claims 1-20 are canceled without prejudice or disclaimer.

Claims 21-42 are new.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate status identifier.

New Claim 21 has been drafted based on the subject matter of Claim 16 (original) and a skin external preparation containing the N-acetylglucosamine derivative of Claim 3 (original). In the new Claim 21, the N-acetylglucosamine derivative of Claim 3 (original) has been revised by deleting the N-acetylglucosamine derivative of formula (2) and by deleting “a hydrogen atom” from the options of R<sup>7</sup>.

New Claim 22 has been drafted to be directed to a skin external preparation comprising the N-acetylglucosamine derivative of Claim 6 (original).

New claims 39-42 recite retaining vital, elastic, and moist skin as stated in the specification at page 51, lines 7-8.

Support for the remaining claims is believed apparent from the specification as-filed.

### II. Objections to the Specification

The Examiner asked Applicants to identify where in the specification the Brief description of the drawings is located. Office action, p. 2. The brief description of the drawings begin on page 7, lines 12-27. Thus, this objection should be withdrawn.

### III. 35 U.S.C. § 102 Rejections

There six anticipation rejections. Each rejection is traversed under a separate header. The last header states why the present claims should not be rejected.

A. Boullanger

Claims 1, 3-4, 9, and 14 are rejected under 35 U.S.C. § 102(b) as being anticipated by Boullanger et al. (Carbohydrate Research 278 (1995) 91-101). Office action, p. 2. The Examiner identified compounds 4(a-c, e-f) & 6(a-g). Office action, p. 2. The rejected claims are canceled. Thus, this rejection should be withdrawn.

Furthermore, as to the new claims, this rejection should not be made for the reasons stated under the last header below.

B. Shimizu

Claims 1, 2, 3, 5, 10, 16 and 17 are rejected under 35 U.S.C. § 102(b) as being anticipated by Shimizu (JP 02243611, September 1990, English translation). Office action, p. 3. The rejected claims are canceled. Thus, this rejection should be withdrawn.

Furthermore, as to the new claims, this rejection should not be made for the reasons stated under the last header below.

C. Noriaki

Claims 1-3, 11, 15, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Noriaki et al. (JP 10-139793, May 1998). Office action, p. 4. The rejected claims are canceled. Thus, this rejection should be withdrawn.

Furthermore, as to the new claims, this rejection should not be made for the reasons stated under the last header below.

D. Hare

Claim 18 is rejected under 35 U.S.C. § 102(b) as being anticipated by Hare et al. (Biochemistry 1994, 33, 101 37-1 0148). Office action, p. 5. The rejected claims are canceled. Thus, this rejection should be withdrawn.

Furthermore, as to the new claims, this rejection should not be made for the reasons stated under the last header below.

E. Schmidt

Claims 1, 3, and 13 are rejected under 35 U.S.C. § 102(b) as being anticipated by Schmidt et al. (U.S. 5,696,246, December 9, 1997, PTO-1449 submitted April 11, 2005). Office action, p. 6. The rejected claims are canceled. Thus, this rejection should be withdrawn.

Furthermore, as to the new claims, this rejection should not be made for the reasons stated under the last header below.

F. Lambright

Claims 1, 3, 7-8, & 12-13 are rejected under 35 U.S.C. § 102(b) as being anticipated by Lambright et al. (Biochemistry 1985, 24, 910-914). Office action, p. 6. The rejected claims are canceled. Thus, this rejection should be withdrawn.

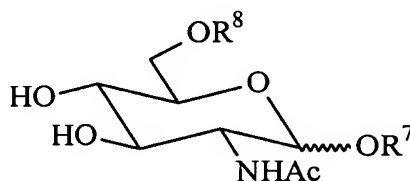
Furthermore, as to the new claims, this rejection should not be made for the reasons stated under the last header below.

G. Why each of the anticipation rejections do not apply to the present claims.

A claim is anticipated by a reference only if that reference describes every limitation of the claim. MPEP § 2131. Claim 21 reads as follows:

21. A skin external preparation comprising an N-acetylglucosamine derivative of formula (3):

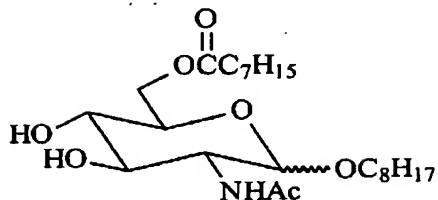
formula (3)



wherein  $R^7$  is an alkyl group having 2 to 18 carbon atoms;  $R^8$  is an acyl group having 2 to 18 carbon atoms; and the steric structure at position 1 may be  $\alpha$  or  $\beta$ .

New Claim 22, depending from Claim 21, recites that the N-acetylglucosamine derivative of formula (3) in Claim 21 is an N-acetylglucosamine derivative of formula (6):

formula (6)



wherein the steric structure at position 1 may be  $\alpha$  or  $\beta$ .

The Examiner has cited eight documents (see the obviousness rejection too) in the Office action. However, none of the documents describes the N-acetylglucosamine derivatives of formula (3) and (6) contained in the skin external preparations of the claims 21 and 22, respectively. Nor do these documents describe the methods of claims 23-42. Therefore, the present invention has novelty over the documents.

#### IV. 35 U.S.C. § 103(a)

There are two rejections. Each rejection is traversed under a separate header. The last header states why the present claims should not be rejected.

##### A. Boullanger and Shimizu in view of Anderson

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boullanger et al. (Carbohydrate Research 278 (1995) 91-101) and Shimizu (JP 0224361 1, September 1990, English translation) in view of Anderson (WO 00151 553, September 8, 2000). Office action, p. 7. The rejected claims are canceled. Thus, this rejection should be withdrawn.

Furthermore, as to the new claims, this rejection should not be made for the reasons stated under the last header below.

##### B. Hare and Schmidt in view of Mishima et al. and Oyama

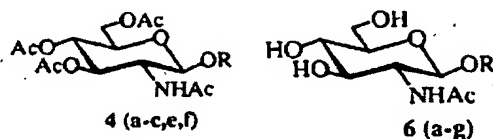
Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hare et al. (Biochemistry 1994, 33, 10137-10148) and Schmidt et al. (U.S. 5,696,246, December 9, 1997, PTO-1449 submitted April 11, 2005) in view of Mishima et al. (JP 62036306, February 1987, English translation) and Oyama et al. (EP 0402776, December 1990). Office action, p. 8. The rejected claims are canceled. Thus, this rejection should be withdrawn.

Furthermore, as to the new claims, this rejection should not be made because of the present version of the claims.

C. Why each of the obviousness rejections do not apply to the present claims.

The Examiner urged that it would have been obvious to one of ordinary skill in the art to prepare a compound of formula (6). Office action, p. 8. Applicants submit that it is unreasonable to combine teachings of Boulanger et al. and Shimizu and Anderson (WO 00/51553) to give a composition for cosmetic use. As the Examiner mentioned, Anderson teaches skin cosmetics. Office action, p. 7.

Even if Boulanger teaches 4(a-c, e, f) are intermediates to 6(a-g) (scheme 2i)



a, R = n-C<sub>8</sub>H<sub>17</sub>, b, R = n-C<sub>9</sub>H<sub>19</sub>, c, R = n-C<sub>11</sub>H<sub>23</sub>, d, R = n-C<sub>12</sub>H<sub>25</sub>, e, R = n-C<sub>14</sub>H<sub>29</sub>, f, R = n-C<sub>18</sub>H<sub>37</sub>,  
g, R = β-cholesteryl. [Scheme 1]

Boulanger merely evaluated 6(a-g)'s suitability to incorporate into the bilayers of liposomes and to form mixed monolayers. Boulanger, p. 95, first para. Above "3. Experimental." And Shimizu teaches that N-acetylglucosamine –stearate or –palmitate are gelling agents. Shimizu translation, p. 4, 2d-3d full paragraphs. Along these lines, Shimizu teaches that gelling agents are typically blended with solid waxes in order to provide shape retention of a solid cosmetic. Shimidzu translation, p. 3, ll. 3-4. The predicted result of modifying 6(a-g), which Boulanger teaches is something that incorporates into the bilayers of liposomes and forms mixed monolayers, by adding a –stearate or –palmitate, which substituents were used on gelling agents, seems less than clear. It is respectfully submitted that the resultant modified compound would not have been expected to make it possible, e.g., to promote hyaluronic acid production.

Furthermore, Anderson only discloses, as a component of the skin cosmetics, amphipathic molecules having a length of about 80-120 nm and only discloses straight-chain phospholipids as a specific example of the amphipathic molecules. On the other hand, the

main moiety of the compounds of the present invention is a saccharide. The amphipathic molecules disclosed in Anderson are completely different from the N-acetylglucosamine derivatives disclosed in the present invention in structure. Furthermore, the external skin preparations of the present invention do not utilize the amphiphilic property of the compounds. Therefore, we believe that there is no motivation to combine these teachings, so that the present invention non-obvious over the cited documents.

**Conclusion**

It is believed that the present application is in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.


The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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FOLEY & LARDNER LLP  
Customer Number: 22428  
Telephone: (202) 672-5414  
Facsimile: (202) 672-5399

By  (45,943) FER  
SEANA PASSINO  
Richard L. Schwaab  
Attorney for Applicant  
Registration No. 25,479